

**This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details.**

**Author(s):** Holopainen, Riikka; Piirainen, Arja; Karppinen, Jaro; Linton, Steven James; O'Sullivan, Peter

**Title:** An adventurous learning journey : Physiotherapists' conceptions of learning and integrating cognitive functional therapy into clinical practice

**Year:** 2022

**Version:** Accepted version (Final draft)

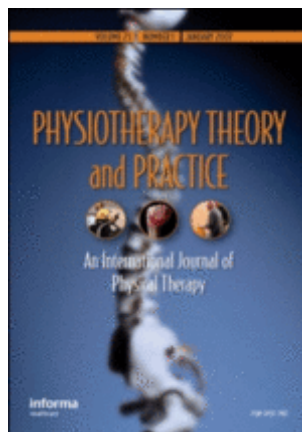
**Copyright:**

**Rights:** In Copyright

**Rights url:** <http://rightsstatements.org/page/InC/1.0/?language=en>

**Please cite the original version:**

Holopainen, R., Piirainen, A., Karppinen, J., Linton, S. J., & O'Sullivan, P. (2022). An adventurous learning journey : Physiotherapists' conceptions of learning and integrating cognitive functional therapy into clinical practice. *Physiotherapy Theory and Practice*, 38(2), 309-326.  
<https://doi.org/10.1080/09593985.2020.1753271>



**An adventurous learning journey. Physiotherapists' conceptions of learning and integrating Cognitive Functional Therapy into clinical practice.**

Journal:	<i>Physiotherapy Theory and Practice</i>
Manuscript ID	UPTP-2019-0217.R3
Manuscript Type:	Qualitative Research Report
Keywords:	qualitative, physiotherapist, phenomenography, Cognitive Functional Therapy, Biopsychosocial, implementation

SCHOLARONE™  
Manuscripts



## INTRODUCTION

1  
2  
3  
4  
5  
6 2 Low back pain (LBP) is a leading cause of disability throughout the world (Hartvigsen et al.,  
7  
8 3 2018) and current clinical practice has failed to effectively manage it (Buchbinder et al., 2018).  
9  
10 4 Major guidelines on the management of LBP recommend a biopsychosocial (BPS) management  
11  
12 5 approach (Koes et al., 2010; NICE, 2016), and despite recent studies indicating better  
13  
14 6 understanding of the BPS framework in physiotherapy, transferring research findings into  
15  
16 7 practice is a well-known problem. Unfortunately, professionals' adherence to evidence-based  
17  
18 8 guidelines is poor (O'Sullivan, O'Keeffe, and O'Sullivan, 2017) and both undergraduate and  
19  
20 9 postgraduate curricula pay very little attention to integrating psychological (cognitive and  
21  
22 10 emotional), social and environmental factors into the management of LBP (Ehrström, Kettunen,  
23  
24 11 and Salo, 2018; Foster and Delitto 2011). As a result, many clinicians report feeling  
25  
26 12 inadequately skilled to treat patients with persistent pain and struggle to deal with the  
27  
28 13 psychosocial factors. They often also stigmatize their patients with persistent pain (Synnott et  
29  
30 14 al., 2015; Toye, Seers, and Barker 2017; Zangoni and Thomson, 2017). Furthermore, health  
31  
32 15 care professionals, including physiotherapists, often use the BPS model dualistically and  
33  
34 16 prioritize biomedical findings. Only when no diagnosis can be found do they turn to  
35  
36 17 psychosocial explanations. This indicates a clear need for training health care professionals to  
37  
38 18 adopt a non-dualistic biopsychosocial approach to help them better support patients with  
39  
40 19 persistent pain (Toye, Seers, and Barker 2017).  
41  
42  
43  
44  
45  
46  
47  
48  
49

50 21 A number of approaches have been developed to apply the BPS framework in physiotherapy  
51  
52 22 practice in the management of musculoskeletal disorders. A recent systematic review  
53  
54 23 demonstrated that physiotherapist-led, psychologically informed LBP treatments provided  
55  
56 24 small effect sizes, with the exception of an RCT that used an intervention called Cognitive  
57  
58 25 Functional Therapy (CFT) (Guerrero, Maujean, Campbell, and Sterling, 2018). The optimal  
59  
60

1 way to train physiotherapists to deliver psychologically informed interventions remains  
2 unknown, as the results of previous attempts to direct physiotherapists' practice behavior  
3 towards the BPS approach have been conflicting. Although attending BPS-orientated  
4 workshops has shown to positively change physiotherapists' beliefs in the short term  
5 (Domenech et al., 2011; O'Sullivan, O'Sullivan, O'Sullivan, and Dankaerts, 2013; Overmeer,  
6 Boersma, Denison, and Linton 2011), actual translation into a change in clinical behaviors and  
7 patient outcomes has been challenging (Fritz, Söderbäck, Söderlund, and Sandborgh, 2018;  
8 Overmeer, Boersma, Denison, and Linton, 2011; Sandborgh, Åsenlöf, Lindberg, and Denison,  
9 2010). For example, an eight-day university course on the cognitive behavioral approach for  
10 physiotherapists was successful in changing physiotherapists' beliefs and attitudes, but it did  
11 not improve patient outcomes (Overmeer, Boersma, Denison, and Linton, 2011). The authors  
12 concluded that the learning process requires time and experiences of practice and clinical  
13 supervision, which short courses cannot provide.

14 Qualitative research provides a deeper understanding of these issues and to date, only a few  
15 qualitative studies have explored physiotherapists' views on changing their practice into a BPS  
16 approach in the management of LBP (Karstens et al., 2018; Sanders, Ong, Sowden, and Foster,  
17 2014). Three specific studies (Cowell et al., 2018; O'Sullivan, O'Sullivan, O'Sullivan, and  
18 Dankaerts 2013; Synnott et al., 2016) have explored physiotherapists' views on adopting a CFT  
19 approach. CFT is an example of a BPS method that challenges more traditional biomechanical  
20 / pathoanatomical physiotherapy approaches. It is an integrated physiotherapist-led cognitive  
21 and behavioral intervention for individualizing the self-management of persistent LBP, once  
22 serious and specific pathology has been excluded and has shown promising results (O'Sullivan,  
23 Dankaerts, O'Sullivan, and O'Sullivan, 2015; Vibe Fersum et al., 2013). It uses a BPS clinical  
24 reasoning framework to explore, identify and manage cognitive, emotional, social, physical and  
25 lifestyle barriers to recovery (O'Sullivan et al., 2018; Synnott et al., 2016). CFT training aims

1 to equip physiotherapists with these skills through a combination of written resources, training  
2 workshops that include practical experimentation, and demonstrations with live patients, as well  
3 as direct clinical supervision and feedback (O'Sullivan et al., 2018; Vibe Fersum et al., 2013).  
4 All three qualitative studies (Cowell et al., 2018; O'Sullivan, O'Sullivan, O'Sullivan, and  
5 Dankaerts, 2013; Synnott et al., 2016) found that after CFT training, physiotherapists reported  
6 feeling more confident in their capacity and skills to manage the BPS dimensions of non-  
7 specific persistent LBP. This included increased confidence in identifying patients'  
8 psychosocial factors and modifying their unhelpful beliefs, understanding the importance of  
9 therapeutic alliance and listening skills, and increased focus on everyday functional  
10 movements. However, the effects of these changes on patient outcomes are not known. The  
11 physiotherapists in the Synnott et al. (2016) and Cowell et al. (2018) studies had undergone  
12 intensive CFT training, which included clinical supervision, and the trainers deemed the  
13 physiotherapists in the Synnott et al. (2016) study competent in delivering CFT. The twelve  
14 physiotherapists in the O'Sullivan, O'Sullivan, O'Sullivan and Dankaerts (2013) study were  
15 interviewed after participating in nine days of CFT workshops, but without clinical supervision.  
16 As the study included physiotherapists who had changed their beliefs to a greater extent than  
17 average, some of whom had previous knowledge of CFT, these findings may not represent the  
18 perspective of other physiotherapists who attended the CFT workshops and reported less  
19 change in their back-pain beliefs.

20  
21 Given the limitations and challenges documented in the studies above, it seems that a greater  
22 understanding is needed of physiotherapists' experiences of learning and integrating CFT into  
23 clinical practice. To gain further knowledge of this process, a qualitative study was conducted  
24 in parallel with a feasibility study exploring the implementation of the CFT approach in Finnish  
25 primary health care. To date, the training of physiotherapists to deliver CFT in clinical trials

1  
2  
3 1 has been intensive and has included direct supervision and feedback (Synnott et al., 2016; Vibe  
4  
5 2 Fersum et al., 2015), which may be a barrier to broad implementation across the profession. It  
6  
7 3 is not known whether less intensive approaches are effective in training physiotherapists in CFT  
8  
9 4 in a non-native English-speaking country. To keep the training in line with the usual delivery  
10  
11 5 of continuing education courses, we conducted a training intervention that consisted of four to  
12  
13 6 six days of workshops combined with a web-based platform offering optional individual  
14  
15 7 learning tasks to support learning. Importantly, the training included no clinical supervision of  
16  
17 8 the physiotherapists. We investigated the views of all the physiotherapists who participated in  
18  
19 9 the workshops.  
20  
21  
22  
23  
24

25 10 A learning process is always an individual experience and is different for each participant.  
26  
27 11 However, previous studies have paid little attention to the variation between the  
28  
29 12 physiotherapists' different kinds of experiences of learning and integrating CFT. The aim of  
30  
31 13 the present study was to identify and explore physiotherapists' conceptions of learning the  
32  
33 14 principles of CFT and integrating it into clinical practice.  
34  
35  
36  
37

## 38 15 METHODS

### 39 16 Study design

40  
41  
42  
43  
44 17 To explore the physiotherapists' conceptions of learning about and integrating CFT into clinical  
45  
46 18 practice, we employed a qualitative research design (Åkerlind, 2017) involving semi-structured  
47  
48 19 interviews of twenty-two physiotherapists who attended a four-day CFT workshop in April  
49  
50 20 2016. We chose a phenomenographic approach as this allowed us to explore the variation in  
51  
52 21 the conceptions of the participating physiotherapists (Åkerlind, 2005; Åkerlind, 2017).  
53  
54  
55

### 56 22 Physiotherapists' training

57  
58  
59  
60

1  
2  
3 1 The aim of the training intervention was to: 1. present a multi-dimensional framework for  
4  
5 2 understanding the biopsychosocial nature of LBP, 2. provide training in communication skills  
6  
7 3 to explore the cognitive, emotional and behavioral aspects of LBP, and 3. develop an  
8  
9 4 understanding of how to deliver CFT to patients with persistent LBP (O’Sullivan et al., 2018).  
10  
11 5 It consisted of lectures, group discussions and patient demonstrations in line with previous  
12  
13 6 studies, to enhance learning (O’Sullivan, O’Sullivan, O’Sullivan, and Dankaerts, 2013; Main  
14  
15 7 et al., 2012). The more detailed content of the initial training intervention is presented in Table  
16  
17 8 1 and the CFT approach is described in further detail in O’Sullivan et al. (2018). The  
18  
19 9 continuation of learning after the training sessions was supported by providing optional  
20  
21 10 individual learning tasks (reporting of patient cases) and additional reading materials on a web-  
22  
23 11 based platform. A two-day booster session was held in January 2017, which 12 of the  
24  
25 12 physiotherapists attended. The booster session included four patient demonstrations that we  
26  
27 13 used to deepen the physiotherapists’ knowledge of the application of CFT (Table 2). The  
28  
29 14 workshops were delivered by Peter O’Sullivan (initial workshop); Kasper Ussing (booster  
30  
31 15 workshop), who also delivered the CFT part of the training; and Steven J. Linton, who delivered  
32  
33 16 the communication and psychosocial part of the training in the initial workshop.  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

18 Table 1. Content of initial four-day workshop here

20 Table 2. Content of two-day booster session here

### 21 Participants

22 The participants represented a purposive sample of 22 of the 23 physiotherapists who  
23 participated in the initial CFT training workshop. One physiotherapist dropped out of the project



1  
2  
3 1 after the initial workshop because she changed jobs. We invited primary health care (public  
4  
5 2 health care and occupational health care) study sites from across Finland by contacting the  
6  
7 3 physical and rehabilitation medicine specialists of the hospital districts or the persons in charge  
8  
9 4 of treating musculoskeletal problems in occupational health care. The sites were only included  
10  
11 5 if they were interested in participating in the feasibility study and committed to reimbursing the  
12  
13 6 travel and salary costs of their personnel. The participating physiotherapists were selected from  
14  
15 7 the involved units by the persons in charge, and the researchers did not influence this selection.  
16  
17  
18  
19  
20 8 The first author contacted all the physiotherapists by email and all 22 agreed to participate in  
21  
22 9 the interviews. They were from all over Finland and worked in both public outpatient clinics  
23  
24 10 (14) and occupational (8) health care units. Three of them were men and 19 women, with a  
25  
26 11 mean age of 47 years (33–61). They had an average of 20 (9–31) years of clinical experience  
27  
28 12 after graduation. Appendix 1 shows detailed information on the participants' gender, age, work  
29  
30 13 experience, health care setting and amount of CFT training.  
31  
32  
33  
34

#### 35 14 Data collection

36  
37  
38  
39 15 The first author, who was not involved in planning and delivering the workshops, collected the  
40  
41 16 data in spring 2017 after the end of the training intervention. She was present during the  
42  
43 17 workshops to understand the process of the training but was otherwise unknown to the  
44  
45 18 participants. The semi-structured interviews took place at the physiotherapists' workplaces  
46  
47 19 according to their wishes. They were conducted in Finnish and only the interviewer and the  
48  
49 20 interviewee were present. The quotations were later translated into English by a professional  
50  
51 21 translator. The interviews began by asking: "Tell me about your process of learning CFT and  
52  
53 22 implementing it in clinical practice" and "How do you see CFT now – what does it mean to  
54  
55 23 you?", and continued dialogically according to the interviewees' answers (see interview guide  
56  
57 24 Appendix 2.) The interview guide was pilot tested by a member of the research group who was  
58  
59  
60

1 not involved in this study but had undergone CFT training. The interviews lasted 62 minutes  
2 on average (47–81) and were audio-recorded and transcribed verbatim (clean, word-to-word)  
3 by the first author (Åkerlind, 2008; Brinkmann, 2013). The resulting data consisted of 368  
4 pages (font =Times New Roman 12, spacing = 1.5). Participant validation of the  
5 transcripts/findings was not carried out (Åkerlind, 2005).

### 6 Data analysis

7 In the present study, we aimed to outline the variation among physiotherapists' conceptions of  
8 learning and integrating CFT into clinical work. We chose a phenomenographic approach  
9 because it enables systematic identification and description of qualitatively different ways of  
10 experiencing a phenomenon (Marton and Pong, 2005; Åkerlind, 2005) and the identification of  
11 the variation in the physiotherapists' conceptions and of the hierarchical structure of the  
12 conceptions (Åkerlind, 2005; Åkerlind, 2008). Phenomenographic studies aim to elucidate the  
13 second order perspective; to present the participants' conceptions in categories of description  
14 that illustrate the variation in how the participants understand the phenomenon in question  
15 (Marton and Pong, 2005; Åkerlind, 2017).

16 The phenomenographic analysis followed the principles presented in the literature (Marton and  
17 Pong, 2005; Åkerlind, 2005; Åkerlind, 2008). Phenomenography is a data-driven approach,  
18 which means that all findings arise from the data (Åkerlind, 2005). Although the categories of  
19 description were derived from the physiotherapists' interviews, they do not directly represent  
20 different types of individuals: They describe the variation in the physiotherapists'  
21 understanding of the process of learning and integrating CFT on the collective level (Marton  
22 and Booth, 2009). In other words, we abandoned the boundaries separating the individuals and  
23 focused on the pool of meanings discovered in the data (Åkerlind, 2005; Marton and Booth,  
24 2009). In the present study, this means that the physiotherapists may have expressed more than

1  
2  
3 1 one conception or may have had conceptions that belonged to different categories, related to  
4  
5 2 different themes.  
6  
7

8  
9 3 The analysis process began by the first author listening to the interviews and reading the  
10  
11 4 transcripts several times to become familiar with the data and to identify the meaningful units.  
12

13 5 The selected quotes made up the data pool from which the similarities and differences, as well  
14  
15 6 as the structural relationships, were identified. The initial coding of the data was conducted  
16

17 7 using a Microsoft Word (Microsoft Corp, Redmond, Washington, USA) document and the  
18  
19 8 themes were found by sorting the printed quotes into piles and examining borderline cases (RH  
20  
21 9 & AP). As the themes emerged, we compared and contrasted the selected quotes in an iterative  
22  
23 10 manner. During this process, we observed that each theme varied hierarchically and by  
24  
25 11 comparing the variation of the themes, we defined the categories of the phenomenon. During  
26  
27 12 the analysis, the results were discussed ~~in the larger study group~~ with all of the authors and in a  
28  
29 13 group of qualitative researchers ~~professionals familiar with qualitative research methods~~, and  
30  
31 14 the consistency between the original data and our findings was constantly evaluated to minimize  
32  
33 15 the influence of our own interpretations. The categories of description were organized  
34  
35 16 hierarchically – some conceptions were more complex or more complete than others. These  
36  
37 17 categories of description represented the expanding awareness of the phenomenon of learning  
38  
39 18 and integrating CFT into clinical practice. During this process, the categories' critical aspects  
40  
41 19 were identified. These critical aspects of awareness highlight the transitions between the  
42  
43 20 categories of description and describe what is needed to move from the understanding of one  
44  
45 21 category of description to a more complex one (Åkerlind, 2005; Åkerlind, 2008).  
46  
47 22 We obtained ethical approval from the Northern Ostrobothnia Hospital District Ethics  
48  
49 23 Committee. Before conducting the interviews, we explained the nature of the study to the  
50  
51 24 participating physiotherapists. The interviewees provided their informed consent. The reporting  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 1 of the study adhered to the consolidated criteria for qualitative research (COREQ) guidelines  
4  
5 2 (Tong, Sainsbury, and Craig, 2007).  
6  
7  
8 3  
9

## 10 4 RESULTS

11  
12  
13 5 The phenomenon of learning and integrating CFT into clinical practice, as reported by the  
14  
15 6 physiotherapists, was captured by five hierarchical categories of description: I) Recognizing  
16  
17 7 the difference of the new approach; II) The new approach challenging current practice; III)  
18  
19 8 Waking up to explore; IV) Commitment to the new approach; and V) Expanding the application  
20  
21 9 of the new approach. These categories were hierarchically structured, and the latter categories  
22  
23 10 represent more developed conceptions of learning and integration of the CFT approach than the  
24  
25 11 former categories. They varied on the basis of four themes: 1) Membership of work community;  
26  
27 12 2) Learning journey; 3) Transition to new working methods; and 4) Professional role as a  
28  
29 13 physiotherapist (Table 3, Figure 1).  
30  
31  
32  
33

34 14 The abbreviations at the end of the quotes identify the participating physiotherapists and page  
35  
36 15 number of the transcript. The variation of the themes within each category of description are  
37  
38 16 highlighted by the name of each theme in **bold** and the name of each theme of variation in  
39  
40 17 *italics* throughout the results section (see Table 3).  
41  
42  
43

44 18 Insert Table 3 here.  
45  
46

### 47 19 Category I Recognizing the difference of the new approach

48  
49  
50 20 This category describes physiotherapists' perceptions of learning about CFT and the  
51  
52 21 realizations that arose, especially at the beginning of the learning journey during the workshop  
53  
54 22 and after returning to the clinic. This highlighted the great difference of the CFT approach; the  
55  
56 23 physiotherapists' previous ways of working, and the ways in which their colleagues still  
57  
58 24 worked. As a result, they reported feeling isolated in their work communities and resistance  
59  
60

1  
2  
3 1 towards the approach and the training, and insecurity about their skills. They also reported  
4  
5 2 doubting whether this was the right way in which to work. Some were unable to accept the  
6  
7 3 proposed change in their work, and their learning journey did not continue beyond the  
8  
9 4 conceptions described in this category.

10  
11  
12  
13 5 The first identified theme of variation was **membership of the work community**, which in this  
14  
15 6 category consists of *loneliness in one's work community*. The physiotherapists felt isolated in  
16  
17 7 their work communities, as others did not understand their new way of working, and they had  
18  
19 8 insufficient opportunities to share their thoughts due to a combination of busy workdays and a  
20  
21 9 lack of physiotherapists in the same unit.

22  
23  
24  
25 10 *"This is quite a lonely job; I can't share these thoughts with anybody."* V24

26  
27 11 *"In practice [during the workdays] there is not time to discuss but if there would be a forum*  
28  
29 12 *where we could share our experiences..."* Q13

30  
31  
32  
33 13 The second theme of variation, **the learning journey**, in this category focused on *resistance*  
34  
35 14 towards the new approach and training style. The resistance came as a surprise to some of the  
36  
37 15 participants and it was seen as a barrier to learning during the workshop. They understood that  
38  
39 16 the trainers wanted to wake them up, but a few of them found the way of training somewhat  
40  
41 17 abrasive and the patient demonstrations a manifestation of a "guru culture". Most  
42  
43 18 physiotherapists were able to overcome the resistance, but for some it prevented their learning  
44  
45 19 journey from properly starting.

46  
47  
48  
49 20 *"During the first two days, I shared a room with X and we had quite tough discussions in the*  
50  
51 21 *evenings and went for walks to ventilate and it felt quite surreal, I just couldn't accept it even*  
52  
53 22 *though the patient cases were clear...my reaction was strong and it took me by surprise that I*  
54  
55 23 *reacted so strongly, when thinking about it in hindsight... I don't know, maybe changing one's*  
56  
57 24 *own thoughts and beliefs was just so hard..."* C1

1  
2  
3 1 *“My memory is that we didn’t go through some of the key things in communication, but it was*  
4  
5 2 *just him [POS] showing off in front of us, just like this video presenting this man who got better,*  
6  
7 3 *which... in my opinion, diminished his credibility, with him boosting his messages with stuff*  
8  
9 4 *just like healers and preacher healers do...they have these videos as well, so it doesn’t*  
10  
11 5 *contribute anything” B17*

12  
13  
14  
15 6 In this category, the third theme, **transition to new working methods** was related to the  
16  
17 7 physiotherapists feeling *insecure* about applying CFT in their practice and changing their own  
18  
19 8 way of working. Through experience they accepted parts of it, but they felt they had insufficient  
20  
21 9 training and practice to become confident, because they considered most of their patient  
22  
23 10 population unsuitable for the CFT approach (e.g. patients with acute pain). They also reported  
24  
25 11 insecurity about their clinical reasoning skills in the BPS framework and about their knowledge  
26  
27 12 of pain science and psychosocial factors. Applying certain aspects of the CFT approach was  
28  
29 13 perceived as difficult and the uncertainties reported by the physiotherapists varied.

30  
31  
32  
33  
34 14 *“I just wish I had more of these [low back pain] patients, there are so many patients with*  
35  
36 15 *shoulder pain and I would need to be able to practice this broader approach” G14*

37  
38  
39 16 *“Sometimes...I feel like that is this too psychological this approach that I am not ready to think*  
40  
41 17 *about these things with the patient so deeply and to reflect her thoughts like I don’t have that*  
42  
43 18 *kind of training I can’t do that” I3*

44  
45  
46  
47 19 *“Well, maybe it was drawing the summary...I haven’t done it many times so far... maybe it felt*  
48  
49 20 *kind of the hardest thing...somehow I don’t trust myself to make it visible so the patient can see*  
50  
51 21 *what the cause and effect relationships are... that kind of uncertainty...” O9*

52  
53  
54 22 Despite the various challenges to adopting the approach, the physiotherapists reported that their  
55  
56 23 **professional role as a physiotherapist** had changed. In this category, they reported having  
57  
58 24 started to *look at their patients in a different way*, understanding that there was no one correct

1 way to move. They noticed that many LBP patients needed relaxation rather than exercises that  
2 created more tension and started to observe different aspects in their patients' movement  
3 behaviors.

4 *"It's kind of a relief that you don't always need to think that you must do something but you  
5 are allowed be laid-back and to relax, there is no right and wrong... no wrong kind of a body  
6 and there is no right or wrong kind of sitting posture or...for example during our first day of  
7 training that we had a year ago, there were many little things, just basics on how to turn relaxed  
8 and lift and be relaxed..." E3*

9 *"Well, firstly observing the patient ...with new eyes, with me immediately looking if he's tensing  
10 some part of his body or if he's relaxed. Is there some avoidance behavior to do with his  
11 tension... it starts with ... observing his basic movement: how he sits, how he undresses, how  
12 he is, and it already gives some direction to the whole interview part." F2*

#### 14 Category II Towards integrating the new approach

15 The focus of this category was on the practical challenges that the physiotherapists faced when  
16 trying to integrate their newly learned skills into their practice. There were multiple barriers to  
17 the integration of these skills even though they wanted to change their practices, and in this  
18 category, old and new ways of working were often combined.

19 The physiotherapists' understanding and experiences of **membership of their work**  
20 **community** expanded from the first category to the second. They started reflecting on the  
21 *organizational processes as barriers* to integrating CFT into practice. They reported a lack of  
22 capacity to deliver CFT due to short appointment times, being constantly in a hurry and unclear  
23 referral pathways. Some also reported feeling the need to adhere to old protocols that they no  
24 longer saw as valid.

1  
2  
3 1 *“It is usually maximum one hour and I should also do the documentation before the next patient*  
4  
5 2 *arrives so... this lack of time...these patients would need much more time.” G8*  
6  
7

8  
9 3 *”If we do this kind of thing [CFT] we need to have some kind of [psychological] support for*  
10 4 *these patients if they haven't gotten into contact yet, like I don't feel like a professional in those*  
11 5 *things even though I feel that I communicate with the patients quite well...we have lots of small*  
12 6 *groups and some pain groups and breathing groups but it's not the same, these people need*  
13 7 *individual [management]... well, I think seeing the need to get these things working was*  
14 8 *certainly the biggest transformation in this process.” E3*  
15  
16  
17  
18  
19  
20  
21

22  
23 9 *“... mostly... in the beginning we had certain structures for doing this kind of preventive*  
24 10 *assessment and all the materials and templates were there... with this kind of risk-based model*  
25 11 *of patients' own opportunities to influence the situation and motor control tests that I now feel*  
26 12 *are less important, but I still need to give the material to the patient and I feel that I don't want*  
27 13 *to so I need to fight it because I see that the old materials are not what I would like to give the*  
28 14 *patient.” C12*  
29  
30  
31  
32  
33  
34  
35  
36

37 15 The physiotherapists faced *personal challenges during the journey*. They reported not being  
38 16 able to fully engage in learning, despite recognizing the need for change, because of a lack of  
39 17 English language skills, difficult life situations and other commitments. **Their learning**  
40 18 **journey** was not progressing in the way they wanted.  
41  
42  
43  
44  
45  
46

47 19 *”Firstly, the English language is not one of my strengths... I looked more at the examples*  
48 20 *[patient demonstrations] and tried to learn from them.” S1*  
49  
50  
51

52 21 *“But immersing myself and getting into the subject has now been of secondary importance*  
53 22 *because of, well, being busy at work and thinking about personal stuff, so I would've gotten*  
54 23 *much more out of this... if I had... studied it.” E17*  
55  
56  
57  
58  
59  
60



1  
2  
3 1 In this category, the **transition to new working methods** meant that insecurity expanded into  
4  
5 2 *combining old and new approaches*. This resulted in an understanding that their previous  
6  
7 3 knowledge could be still utilized and the physiotherapists expressed familiarity with and  
8  
9 4 relatedness to the new approach. The new approach helped them rediscover previously learned  
10  
11 5 but unused tools, such as relaxation exercises.

12  
13  
14 6 *"That way this approach in it was not unfamiliar...I am not trained in psychophysical*  
15  
16 7 *physiotherapy but I have used those methods because my colleagues have used them and I have*  
17  
18 8 *been in that kind of community where I have worked certain amount with psychiatric patients*  
19  
20 9 *and those methods were partially familiar like those related to relaxation and breathing and*  
21  
22 10 *generally those related to wellbeing ... "K1*

23  
24  
25  
26 11 *"All the things we've gained...experienced so far, they're worth utilizing in the background,*  
27  
28 12 *nothing is, nothing is kind of excluded; it's just something extra, this approach." T5*

29  
30  
31 13 In this category, the physiotherapists reported that the new approach challenged them to *change*  
32  
33 14 *their attitudes and language*, positively affecting the way they practiced. They reported that  
34  
35 15 looking at their patients in a different way expanded to acquiring a more courageous attitude  
36  
37 16 towards pain, giving patients more positive messages, progressing more confidently with  
38  
39 17 exercises and unraveling patients' negative beliefs, meaning a change in their **professional role**  
40  
41 18 **as physiotherapists.**

42  
43  
44  
45  
46 19 *"That kind of confidence, that I've looked at those particular red flags and I can be sure that*  
47  
48 20 *I've gotten the courage to encourage this patient to move, and I dare to make them bend. That's*  
49  
50 21 *the kind of thing that really gets reinforced because before there's always been ... a bit too*  
51  
52 22 *much respect for the pain, or being afraid ... with this training I've gained lots of courage and*  
53  
54 23 *I've tried to, like, communicate to the patient that there's nothing to be afraid of, that all those*  
55  
56 24 *sensations aren't necessarily [dangerous]..." P4*

1 *“What it means is that I aim to strengthen the person’s trust in her own body and tell that the*  
2 *back is strong, a positive outlook on the body and it’s use. Confidence and courage... and to*  
3 *bring up positive things about the patient, things that can help the patient move on.” VI*

### 4 Category III Waking up to explore

5  
6 In this category, the training made the physiotherapist wake up to explore their practice more  
7 broadly and after starting to explore ways to make the new approach feasible in their own work  
8 environments, they started to seek solutions to how they could be better help their patients. This  
9 reflective process, which was painful for many, led physiotherapists outside their comfort zones  
10 towards a more multidimensional approach in their practice that considered psychosocial issues  
11 and scientific evidence. This was mostly new to the physiotherapists.

12 The **membership of the work community** was seen in this category as *desire for a common*  
13 *language*. The physiotherapists noticed that the mixed messages that patients received from  
14 different professionals, for example interpretation of MRI results, made their work more  
15 difficult. They also sought more multidisciplinary work methods than those currently in use in  
16 their work communities. The desire for a common language extended beyond their own work  
17 community; they also wished to spread evidence-based understanding of LBP more widely  
18 among health care professionals and in the media.

19 *“Well, the problem was that he [a patient] had an assessment and opinion from ten different*  
20 *experts, as well as his own... it was really hard to start helping him.” D2*

21 *”If other professionals could adopt this... and maybe cooperate... in the future we should do*  
22 *multidisciplinary work...that could maybe be fruitful if we spoke the same language and we*  
23 *could promote this together...” M16*

1 *“This should be in the news. This is such a wonderful message that everybody should be aware*  
2  
3  
4  
5  
6 2 *of this.” V23*  
7

8  
9 3 The physiotherapists stated that to get the **learning journey** started, a feeling of *being shaken*  
10  
11 4 was necessary. It is not easy to turn one’s thinking upside down, and in the beginning, the  
12  
13 5 physiotherapists felt dumbfounded; the training was an eye-opening experience. For some, the  
14  
15 6 shock was bigger than expected. Others stated that this was the greatest change in their  
16  
17 7 professional thinking, their biggest upheaval since graduation.

18  
19  
20 8 *“Could I say that sometimes making a change gets easier, you know, when you get properly*  
21  
22 9 *shaken up, it might be... it can depend on a person, it may be that for me it suited well because*  
23  
24 10 *I adopted those things quite easily” V16*

25  
26  
27  
28 11 *“Well, those four days, it was like being hit over the head, somehow just like a kind of stunning*  
29  
30 12 *experience, so really, really like interesting... somehow I kind of woke up and became eager to*  
31  
32 13 *sort of look at things from a totally different viewpoint.” O1*

33  
34  
35  
36 14 **The transition to new working methods** was linked to a *critical reflection on one’s own way*  
37  
38 15 *of working*. Some even felt ashamed that they had earlier unhesitatingly believed what was  
39  
40 16 taught at workshops. Now they discovered that some of those statements lacked evidence,  
41  
42 17 which led to observing their previous ways of thinking and working critically, and they hoped  
43  
44 18 to adopt work practices based on evidence in the future.

45  
46  
47  
48 19 *“Of course I haven’t been scientifically oriented, I have just learned by doing and I have*  
49  
50 20 *thought that what I have learned was right and I have never been able to question whether there*  
51  
52 21 *would be something wrong... so it was confusing... but it makes sense because he could explain*  
53  
54 22 *using research and the materials I have been reading...” P3*

55  
56  
57  
58 23 *“I look at the way I worked earlier in a different light...I don’t mean that what I’ve done has*  
59  
60 24 *been all wrong, but with a certain patient population, with the high-risk ones there, I don’t*

1  
2  
3 1 *think we've been able to act in the right way...the approaches we've used earlier, they haven't*  
4  
5 2 *been the right ones."* C17  
6  
7

8 3 The physiotherapists' conceptions of their **professional role as a physiotherapist** broadened  
9  
10 4 further in this category and expanded beyond their previous biomedical focus, to consider  
11  
12 5 addressing psychosocial factors. This led them to step *outside their comfort zones*. Many started  
13  
14 6 using the Örebro Musculoskeletal Pain Screening Questionnaire (ÖMPSQ) and the STarT Back  
15  
16 7 Screening Tool (SBST) as shields when starting these conversations, and felt they were now  
17  
18 8 able to listen to distressing patient stories. They understood they did not have to be  
19  
20 9 psychologists to talk about all aspects of life; they could be humans to other humans and obtain  
21  
22 10 permission to use more time for interviews.  
23  
24  
25

26  
27 11 *"If it works... it is because as a therapist in a situation with the skills I have, I feel that I can't*  
28  
29 12 *handle this and progress with this, the questionnaire works as...I don't know whether shield is*  
30  
31 13 *the right word for that"* B6  
32  
33  
34

35 14 *"This phrasing of questions and then the listening itself and getting to grips with those slightly*  
36  
37 15 *trickier topics so that I'm like ready to listen to them; earlier, if the patient started to talk about*  
38  
39 16 *them, I pretty quickly tried to shift the focus away, so I was listening and hearing but then again*  
40  
41 17 *not really..."* C3  
42  
43  
44

45 18 *"After the trip to Lahti [booster session] I told the girls that now I understood that I don't need*  
46  
47 19 *to be a psychologist, that I can ask questions, but I don't need to be the psychologist in the way*  
48  
49 20 *it came across on that trip, you know.. it sort of woke up in me"* N3  
50  
51  
52

53 21

54  
55 22 Category IV: Commitment to the new approach  
56  
57  
58  
59  
60

1  
2  
3 1 In the fourth category, the physiotherapists started to commit to the new approach with support  
4  
5 2 from their work communities. They reported a growing conviction in the approach, an  
6  
7 3 increasing feeling of competence and an understanding that a strong therapeutic alliance  
8  
9 4 facilitates better patient results. The doubts transformed into enthusiasm and many themes  
10  
11 5 within this category describe enablers of learning and integrating CFT rather than the barriers  
12  
13 6 described in the lower categories.

14  
15  
16  
17 7 This category expanded the understanding of learning and integrating CFT into clinical practice  
18  
19 8 to also understanding the importance of commitment to the new approach. In this category,  
20  
21 9 **membership of the work community** meant being enhanced by *a supportive work community*,  
22  
23 10 in which supportive leadership, colleagues with a similar understanding, the opportunity to  
24  
25 11 share clinical experiences, and flexibility in appointment duration all helped in committing to  
26  
27 12 the new approach and sustaining learning as well as changing their practice behaviors.

28  
29  
30  
31  
32 13 *“It’s already a big help that our senior physician knows about this and accepts it ... it certainly*  
33  
34 14 *helps that there are others who’ve been there [on CFT course] so we can share... I’m allowed*  
35  
36 15 *to work this way and use this kind of approach, and we’re lucky we can plan our own*  
37  
38 16 *appointment lists, so in principle, when I see there’s this kind of patient then I can give them a*  
39  
40 17 *longer appointment so I won’t run out of time straightaway...” R12*

41  
42  
43  
44 18 *“It is good, it is very good to have colleagues who I can share and think together these things,*  
45  
46 19 *it is very fruitful and it helps continuing one’s own learning when I can think about this...” Q17*

47  
48  
49  
50 20 Committing to the new approach and setting out on the **learning journey** required *becoming*  
51  
52 21 *convinced* of the approach. Physiotherapists reported that this was facilitated through seeing  
53  
54 22 patient demonstrations. Moreover, watching presentations of scientific evidence, success with  
55  
56 23 their own patients or resolving their own back problems by experimenting and utilizing the CFT  
57  
58 24 approach on themselves were also seen as important, as this made the physiotherapists see that  
59  
60

1 it worked not only for the trainers, who were experienced in using the approach, but also  
2 possibly for the participants.

3 *“Well, there were the patient demonstrations, they’ve been really good, and no way do I believe  
4 that any kind of lectures could open up this approach this well, and there I was, amazed how  
5 ... this approach kind of ... clicked for them, when I listened to these patients at the beginning  
6 I was thinking that this is never going to work and then it was just, click, and there it was, you  
7 saw that they were responsive and, well, the demonstrations were somehow quite  
8 unbelievable.” O8*

9 *“I have tried to reach relaxation and through relaxation my back is basically painfree...so I  
10 have experienced personally this small going astray in this thing and I have personally  
11 benefitted and experienced that this ideology is helpful and now I try to tell this joyous message  
12 for my patients” F8*

13 The physiotherapists perceived that CFT helped them gain better treatment outcomes and the  
14 **transition to new working methods** meant that they felt *more equipped to help* patients with  
15 persistent LBP. They saw more complex patient cases as positive challenges and no longer as  
16 a source of frustration, and this helped them commit to the new approach. This also increased  
17 their enthusiasm towards their work.

18 *“It’s had an effect, it’s somehow given me the feeling that I can do this...it’s challenging but I  
19 sort of feel much better equipped and I can, like, say that there’s a certain kind of professional  
20 pride in knowing and doing something quite valuable...” U13*

21 *“One is more... enthusiastic about those back pain patients, earlier I was like oh no, that one*  
22 *comes again.. that... she has pain in the knee and all other aches and pains. I am more*  
23 *courageous to meet the patient because I don’t need to think who of my colleagues could I send*

1 her to if I can't do anything with her so I have more courage to handle the situation ...my own  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1 her to if I can't do anything with her so I have more courage to handle the situation ...my own  
2 enthusiasm and efficacy has grown here... ” J13

3 The theme of the **professional role as a physiotherapist** broadened as the physiotherapists  
4 reported *getting closer to the patients*. This was possible through new-found, person-centered  
5 communication skills, being present and listening to a patient's story and using time for the  
6 interview, which were seen as ways to improve treatment outcomes.

7 “Yes, well, firstly the interviews have become much longer so it takes much more time when  
8 you let the patient really talk, I've had to hold myself back so I don't put words in the patient's  
9 mouth; I do that sometimes because I'm kind of fast-paced, so sometimes I need to slow down  
10 and tell myself to shut up and let the patient tell... their own story.” P7

11 ”My way of thinking has been enhanced, that when you listen to the patient and you have time...  
12 for that patient, that you listen and that trust. That it is one thing I get praised for - often I have  
13 been the first person who has had time to stop among that patient's problems that ...well...  
14 those seeds sometime sprout from small things I believe in that kind of on the other hand simple  
15 things, in the fruitfulness of the beginning of the therapeutic alliance” K3

16 ”Now she's been heard because it's here that we listen so you ... you just ask the question and  
17 you listen and the same patient can have the experience before of coming to listen when talked  
18 to, when talking about his issues and being given instructions, but he's not necessarily asked  
19 about very much ... that the listening skill in this, in this approach, it's grown, and I've taken  
20 the skill of listening over into my everyday life and my own working community as well” T13

21  
22 Category V Expanding application of the new approach

1  
2  
3 1 In the fifth and widest category, the physiotherapists started applying their skills more broadly,  
4  
5 2 adapting the new approach to their own work environments. This resulted in more  
6  
7 3 collaboration, using the skills in the treatment of other musculoskeletal problems,  
8  
9 4 understanding the importance of continuous learning and using creativity in their work. This  
10  
11 5 was also manifested as renewed professional identity and a wider professional role. These  
12  
13 6 conceptions represent a good understanding of the important principles of CFT.  
14  
15  
16

17 7 In this category, the physiotherapists understood *the importance of multidisciplinary* and saw  
18  
19 8 the **membership of their work community** as playing an integral role as a member of a team.

20 9 Following the training, the physiotherapists reported collaborating more closely with  
21  
22 10 psychologists, psychiatric nurses, physical education instructors, and doctors. This enabled  
23  
24 11 them to help patients navigate the health care system and to know where to refer them if needed.  
25  
26  
27

28  
29 12 *“Maybe I’ve learned...to offer more conversational support, for example, through a*  
30  
31 13 *psychologist or psychiatric nurse, because here the good thing is that you can see a psychologist*  
32  
33 14 *without a referral, she’s said that I can send my patients... and in fact I’ve cooperated a fair*  
34  
35 15 *bit with the psychologist.” K4*  
36  
37

38  
39 16 *“The experience for the patient that he gets the multidisciplinary and he gets the help for sure*  
40  
41 17 *much better in that situation” M17*  
42  
43  
44

45 18 The physiotherapists described their **learning journey** as a *continuous adventurous journey*  
46  
47 19 that continued beyond the official end of the training intervention, and that becoming convinced  
48  
49 20 about the approach was not the end of the journey. The initial four-day workshop was seen as  
50  
51 21 a good start to becoming familiar with the approach, but the physiotherapists stated it took time  
52  
53 22 and practice for things to fall into place. Those who participated in the booster session saw it as  
54  
55 23 important to consolidate and advance their learning. They described the journey as a wave  
56  
57  
58  
59  
60



1 motion: feeling tired from time to time and regressing back to old routines, but then receiving  
2 support to continue the journey again.

3 *“Then about the booster session, I think it was absolutely essential because it cleared up a lot  
4 of thoughts and I’d managed to try it out a bit in practice... I could sort of absorb the knowledge,  
5 I was at that point that, like, now I want to learn all of this, I wanted to even the first time, but  
6 I just couldn’t manage it so well, only now I see it was good that the training was longer ...  
7 after that it’s felt like it clarified my thinking a lot more” A3*

8 *“Well, this year’s been a kind of a journey of adventure, the whole time I feel like I’m  
9 continuously studying and learning this...” V15*

10 *“If I reflect back on this period, I see it’s started with small steps and they’ve become bigger  
11 as I’ve adopted the tools and in a way it’s become partly a routine, but I don’t mean I’ve  
12 reached my target in any way or am somehow skilled in using this method, but I sort of feel I’ve  
13 learned and made progress” K4*

14  
15 The **transition to new working methods** in this category was represented by newly learnt skills  
16 taking on a personal shape. The physiotherapists felt they were given *permission for creativity*,  
17 enabling wide use of their personality and skills. They reported feeling liberated after not having  
18 to strictly work according to certain rules and formulae anymore and were instead able to be  
19 more patient-centered.

20 *“It’s somehow a creative space nowadays...what I find amazing is that there are no specific  
21 [rules]... I don’t know beforehand what’s going to happen next... compared to earlier when we  
22 had certain kinds of practices ... we did certain kinds of tests with all the patients...” V13*

23 *“In my opinion this [CFT] has enabled that I can even use myself creatively...” D14*

1 The physiotherapists reported that their **professional role as a physiotherapist** and their  
2 outlook had changed from that of an “expert” to that of an “enabler”. This included helping  
3 patients develop greater awareness of their cognitive processes and behaviors and helping them  
4 regain body awareness while acting as a coach. The *professional identity of the physiotherapists*  
5 *was renewed*. They felt motivated when the patients figured things out by themselves and the  
6 physiotherapists could support their self-efficacy and saw the value of patients being able to  
7 contact them if needed.

8 *“Well, it’s always when you get somebody to figure things out and if I manage to do that then*  
9 *it’s a very powerful motivating factor because so much can happen in that person’s thinking*  
10 *about the use of the body as well... it’s these moments that are awfully motivating and I don’t*  
11 *think those sorts of strong experiences of successfully helping someone are even necessarily*  
12 *possible with a more traditional or other way...”A9*

13 *“And also those instructions for the future and follow-up and that kind that they feel, those*  
14 *people that they can come and always contact me if they need.. that they have somebody they*  
15 *can trust and who they can return to” G4*

## 16 SUMMARY OF THE FINDINGS AND CRITICAL ASPECTS BETWEEN THE 17 CATEGORIES

18 Insert Figure 1 here

19 We identified a number of key aspects that changed between the categories, which can be  
20 considered essential for the learning journey towards adopting CFT and which should be  
21 considered when planning support for physiotherapists during this process. The first critical  
22 aspect which changed between Categories I and II, was the ability to overcome resistance and  
23 to change one’s views. This included accepting new ideas and implementing parts of the new  
24 approach alongside old ways of working. The process of learning and integrating CFT into

1  
2  
3 1 clinical practice evolved further between Categories II and III, and the critical aspects that  
4  
5 2 changed between these categories arose from the experience of being shaken, the ability to  
6  
7 3 critically reflect on one's own ways of thinking and working. This meant also stepping outside  
8  
9 4 one's comfort zone to further explore the possibilities of the new approach. The critical aspects  
10  
11 5 that helped the learning journey continue further from Category III to IV were support from the  
12  
13 6 work community and gaining confidence in one's own skills through experiential learning,  
14  
15 7 which led to becoming convinced of the new approach. Finally, the critical steps from Category  
16  
17 8 IV to V that led towards expanding the application of the new approach were multidisciplinary  
18  
19 9 collaboration, the use of one's creativity at work, and understanding the importance of  
20  
21 10 continuous learning. Learning did not stop after the training intervention ended; it became an  
22  
23 11 ongoing journey.

## 24 25 26 27 28 29 12 DISCUSSION

30  
31  
32 13 The main finding of this phenomenographic study is that physiotherapists' conceptions of  
33  
34 14 learning and integrating CFT into clinical practice vary greatly. The results show that a number  
35  
36 15 of factors influenced the physiotherapists' learning journey. The critical aspects between the  
37  
38 16 categories of description can be understood as stepping stones towards more complete  
39  
40 17 perceived learning and integration of CFT into clinical practice. The physiotherapists  
41  
42 18 participating in our study worked in different kinds of work communities, had different  
43  
44 19 backgrounds, levels of work experience, and opportunities to engage in learning. These factors  
45  
46 20 possibly contributed to the variation of the physiotherapists' conceptions.

47  
48  
49  
50  
51 21 The process of learning and integrating CFT into clinical practice described by the participating  
52  
53 22 physiotherapists has many commonalities with the Normalization Process Theory (NPT),  
54  
55 23 which helps explain barriers and enablers of the adaptation of new approaches as well as the  
56  
57 24 activities people engage in when attempting to change their ways of working. NPT proposes  
58  
59  
60

1 that implementation is operationalized through four mechanisms: coherence, cognitive  
2 participation, collective action and reflexive monitoring (May and Finch, 2009). These  
3 mechanisms can be seen in our study in the process in which the physiotherapists attempted to  
4 establish coherence between their previous practices and the new approach, described below.

5 First of all, the physiotherapists reported that they had previously received biomedically-  
6 focused training, and that the CFT approach was very different to that which they had been  
7 taught during their undergraduate training and further education workshops. In the beginning,  
8 during the initial workshop, almost everybody felt considerably challenged, which created a  
9 great deal of cognitive dissonance and resistance. Earlier studies exploring physiotherapists'  
10 experiences of adopting a BPS approach for the management of LBP have not reported this.  
11 Sanders, Ong, Sowden and Foster (2014) reported thoughtful obedience from physiotherapists,  
12 but no resistance. This may partially be due to the biomedical background and no previous  
13 knowledge of CFT among the physiotherapists participating in our study, whereas in many  
14 previous studies (Cowell et al., 2018; O'Sullivan, O'Sullivan, O'Sullivan, and Dankaerts, 2013;  
15 Synnott et al., 2016), at least some of the participants had earlier knowledge of the BPS  
16 approach and were competent in CFT or had much more extensive training. Furthermore, many  
17 other psychologically informed physiotherapy approaches concentrate on teaching cognitive  
18 behavioral therapy methods in addition to previous skills, whereas CFT directly challenges the  
19 biomedical beliefs related to physiotherapy practice. This may partly explain our findings.

20 Based on the conceptions of the physiotherapists in our study, if the resistance towards the new  
21 approach and other barriers could not be overcome, no coherence was found, which led to  
22 discontinuing the learning journey and not adopting the CFT approach. The first critical aspect,  
23 cognitive flexibility was important for overcoming resistance and changing one's attitudes and  
24 beliefs, and required cognitive participation (May and Finch 2009). The physiotherapists who  
25 were able to overcome this resistance reported that confusion and the feeling of being shaken

1  
2  
3 1 were important drivers of changing their ways of working. Reflective monitoring of their own  
4  
5 2 practice and thinking was crucial at this level. It seems important that, in addition to the content  
6  
7 3 of the CFT approach, the course provided new tools to reflect on one's own practices and to  
8  
9 4 critically assess information that was delivered by other professionals, the media and journals.  
10  
11 5 Self-reflection is seen as necessary for health care professionals treating people with  
12  
13 6 musculoskeletal problems (Nijs et al., 2013). This might be critical for keeping the lifelong  
14  
15 7 learning journey moving forward and is an important factor for all training interventions to take  
16  
17 8 into account.  
18  
19  
20  
21

22 9 In addition to earlier biomedically-oriented training, we identified a number of barriers to  
23  
24 10 learning and adopting CFT, some of which were similar to those in earlier studies that have  
25  
26 11 explored physiotherapists' experiences of applying psychologically informed care in clinical  
27  
28 12 practice. For example, Karstens et al. (2018) explored physiotherapists' views on adopting a  
29  
30 13 stratified treatment approach in Germany and reported a lack of clear referral pathways as a  
31  
32 14 barrier to adopting the approach, very like our results. Another study (Sanders, Ong, Sowden,  
33  
34 15 and Foster, 2014) explored the same approach in the UK and also recognized the lack of a  
35  
36 16 common language among health care professionals, manifested as confusing messages to  
37  
38 17 patients and a barrier to implementation. We, like most other qualitative studies in this field  
39  
40 18 (Cowell et al., 2018; Fritz, Söderbäck, Söderlund, and Sandborgh, 2018; Karstens et al., 2018;  
41  
42 19 Sanders, Ong, Sowden, and Foster, 2013) observed that a lack of time and a limited number of  
43  
44 20 patient appointments were also common barriers. The economic benefits of spending more time  
45  
46 21 with complex LBP patients must be demonstrated to justify spending this extra time with them.  
47  
48 22 Previous studies (Foster and Delitto, 2011; Nielsen, Keefe, Bennell, and Jull, 2014) also support  
49  
50 23 the importance of appropriate referrals to psychological health professionals. In contrast to  
51  
52 24 these, the physiotherapists in our study also reported a lack of support and feelings of isolation  
53  
54 25 in their work communities, as well as the expectation to follow clinical protocols that they no  
55  
56  
57  
58  
59  
60

1 longer considered evidence based. Previous research has reported that clinical mentoring, which  
2 our physiotherapists did not receive, is an enabler of and is crucial to changing one's practice.  
3 (Cowell et al., 2018; Synnott et al., 2016)

4 Implementation studies have identified that when change in practice happens, it also occurs at  
5 the level of the whole work community and collective action is needed (May and Finch 2009),  
6 whereas changing an individual's beliefs and competences is not sufficient to bring about  
7 changes in clinical behaviors. If physiotherapists feel lonely in the process of change, they  
8 easily regress back to their old ways of working (Pirainen and Viitanen, 2010). Therapist drift  
9 is a known phenomenon and is described in psychotherapy literature (Waller, 2009),  
10 highlighting that clinicians do not always deliver therapy according to its principles, despite  
11 having undergone training. The physiotherapists in our study also noticed this phenomenon.  
12 When they encountered problems, they reported feeling insecure about the CFT approach and  
13 went back to their old, familiar ways of working, which felt safer. Overmeer, Boersma, Denison  
14 and Linton (2011) state that it might even be unrealistic to expect a single physiotherapist to  
15 change outcomes among patients with complex problems, and that this requires collective  
16 action and a broader change at an organizational level.

17 Personal challenges in learning CFT, as reported by the physiotherapists in our study, and which  
18 have not arisen in earlier studies, should be considered when planning support for the  
19 participants of future interventions. Lack of English language skills, difficult personal situations  
20 and commitment to other studies were all reported as barriers to learning.

21 In line with previous studies (Nielsen, Keefe, Bennell, and Jull, 2014; Synnott et al., 2016) and  
22 the NPT (May and Finch, 2009), our results show that this process takes time and that  
23 physiotherapists go through an evaluation of whether or not the new approach fits their current  
24 practice. For some, this resulted in adaptation (May and Finch, 2009), which meant combining

1  
2  
3 1 their new and old ways of working, and not using the new approach regularly. In contrast, others  
4  
5 2 reported having fully adopted the CFT approach and that it had become normalized in their  
6  
7 3 practice (May and Finch, 2009). Like us, Sanders, Ong, Sowden and Foster (2014) observed  
8  
9 4 that the physiotherapists were convinced to change their practices by trying out the new  
10  
11 5 approach and reflecting critically on their work. Also in line with previous studies (Nielsen,  
12  
13 6 Keefe, Bennell, and Jull, 2014; O’Sullivan, O’Sullivan, O’Sullivan, and Dankaerts, 2013;  
14  
15 7 Synnott et al., 2016), although most of our participants reported convincing scientific evidence  
16  
17 8 and live patient demonstrations as the most important enablers of learning, some  
18  
19 9 physiotherapists experienced these demonstrations and the style of presenting the evidence as  
20  
21  
22  
23  
24 10 negative.

25  
26  
27 11 A more complete perceived change in one’s practice towards the CFT approach seems to have  
28  
29 12 been reinforced by support and collaboration in the work community, by becoming convinced  
30  
31 13 and gaining confidence and by successes with patients with complex problems through an  
32  
33 14 experiential learning process. Furthermore, the idea of being creative in one’s work and  
34  
35 15 continuously learning also seem to have been important. One aspect that was unique to our  
36  
37 16 study was that the physiotherapists reported becoming convinced through applying principles  
38  
39 17 of CFT to themselves (if they suffered from LBP).

40  
41  
42  
43 18 We do not know whether the physiotherapists changed their practices. This we will explore in  
44  
45 19 future studies. It has been proposed that new knowledge is implemented at individual, group  
46  
47 20 and organizational levels (Pirainen and Viitainen, 2010; Zidarov, Thomas, and Poissant, 2013)  
48  
49 21 through participating in an iterative process that instead of proceeding linearly, includes phases  
50  
51 22 of more and less active progression. The physiotherapists in our study described this process as  
52  
53 23 a wave motion – the adoption of CFT elements did not occur in a linear manner.  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 1 During the training, the physiotherapists recognized the need to change their practices into a  
4  
5 2 more person-centered approach to care, which closely reflects the expectations of patients with  
6  
7 3 LBP who seek care from health care professionals (Holopainen et al., 2018). In line with  
8  
9 4 previous studies (O'Sullivan, O'Sullivan, O'Sullivan, and Dankaerts, 2013; Synnott et al.,  
10  
11 5 2016), most of the physiotherapists in our study reported an increased awareness of the  
12  
13 6 influence of cognitive, psychological and social factors on persistent LBP. Other studies that  
14  
15 7 have trained physiotherapists to adopt the assessment and management of psychosocial factors  
16  
17 8 in their work have noticed similar problems to those encountered by some of the  
18  
19 9 physiotherapists in our study. For example, the use of screening for psychosocial risk factors in  
20  
21 10 LBP is widely recommended (Lin et al., 2019), but many physiotherapists found this  
22  
23 11 challenging. In line with the conceptions of some of the participants in our study, many other  
24  
25 12 studies have reported the lack of knowledge regarding psychosocial issues and interventions as  
26  
27 13 a barrier to more widely implementing this perspective in physiotherapy practice (Beissner et  
28  
29 14 al., 2009; Foster and Delitto, 2011; Main and George, 2011; Nielsen, Keefe, Bennell, and Jull,  
30  
31 15 2014; Singla, Jones, Edwards, and Kumar, 2015). Even though the physiotherapists in our study  
32  
33 16 were taught how to use the questionnaires, many of them had not started using them or only  
34  
35 17 used them occasionally. This is similar to the results of a study by Sanders, Foster, and Ong  
36  
37 18 (2011), in which general practitioners who were taught to use a subgrouping tool reported  
38  
39 19 barriers to its use: time constraints and other organizational pressures, and a lack of coherence  
40  
41 20 related to the new way of working. However, in our study, the questionnaires were reported as  
42  
43 21 being enablers of discussion of psychosocial issues, as they worked as shields.

44  
45 22 As shown in previous research (Matthias et al., 2010; Toye, Seers and Barker, 2017), primary  
46  
47 23 care providers often view caring for patients with persistent pain as burdensome, and our  
48  
49 24 participants stated that this had been their experience before the CFT training. However, many  
50  
51 25 reported that using the BPS approach to treat LBP felt professionally stimulating and rewarding  
52  
53  
54  
55  
56  
57  
58  
59  
60



1  
2  
3 1 after receiving training and saw more complex patients as welcome challenges. Others have  
4  
5 2 also reported this (Nielsen, Keefe, Bennell, and Jull, 2014; Sanders, Ong, Sowden, and Foster,  
6  
7 3 2014; Synnott et al., 2016). Many reported greater motivation in their work and renewed  
8  
9 4 professional identity. However, even after the training, some of the physiotherapists in our study  
10  
11 5 did not feel adequately prepared to deal with complex patients and wished for more training, as  
12  
13 6 in Sanders et al.'s study (Sanders, Ong, Sowden, and Foster, 2014).

14  
15  
16  
17 7 Most of our participants reported using a more functional examination and management  
18  
19 8 approach, changing their communication to contain more positive messages and a person-  
20  
21 9 centered communication style, similar to previous CFT studies, (O'Sullivan, O'Sullivan,  
22  
23 10 O'Sullivan, and Dankaerts, 2013; Synnott et al., 2016). In our study, some physiotherapists  
24  
25 11 found a new role as an enabler of their patients' own realizations. Enabling patients to find their  
26  
27 12 own solutions to their health issues as opposed the physiotherapist telling them what to do is  
28  
29 13 considered a more powerful way to change patient behaviors (Nijs et al., 2013).

#### 30 31 32 33 34 14 RECOMMENDATIONS FOR THE FUTURE

35  
36  
37 15 The results of this study can be used as a tool for developing pedagogical practices in continuing  
38  
39 16 education in physiotherapy. The critical aspects in the learning process identified in our study  
40  
41 17 could be considered when planning future training interventions for physiotherapists. First, we  
42  
43 18 recommend providing physiotherapists with adequate support when they experience cognitive  
44  
45 19 dissonance and encouraging critical reflection. Secondly, including the whole workplace in the  
46  
47 20 training, increasing flexibility in workplace practices and supportive leadership are important.  
48  
49 21 Steps should also be taken to support the continuation of learning and applying the BPS  
50  
51 22 approach at the workplace to reinforce physiotherapists' confidence in their skills and  
52  
53 23 motivation to learn more. More active collaboration between health care professionals should  
54  
55 24 be encouraged. Continuing support for using the BPS approach and creativity in one's work is  
56  
57  
58  
59  
60

1 recommended. Steps should be taken to mandate the use of screening tools for all patients, in  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1 recommended. Steps should be taken to mandate the use of screening tools for all patients, in  
2 line with best practice recommendations (Lin et al, 2019)

3 Learning about CFT and integrating it into clinical practice is a process, and many of the  
4 physiotherapists in our study stated that without the booster sessions, individual learning tasks  
5 and support from colleagues, the learning journey would have ended, as changing their practices  
6 was not easy. The results of our study support previous research that has found that  
7 physiotherapists' professional development courses of two or three days are unlikely to be  
8 sufficient for changing clinical practice. A longer process is recommended (Keefe, Main and  
9 George, 2018; Mesner et al, 2016). Therefore, future studies in the field of physiotherapy should  
10 also concentrate on exploring the effect of training work communities, instead of only  
11 individual physiotherapists, and include auditing of clinical notes and supervision of and  
12 feedback for participants.

13 Optimizing clinical training in order to help implement new knowledge and skills into clinical  
14 practice is a key priority in the management of persistent LBP. For example, funding for  
15 training interventions, more effective treatment pathways and culture change in work  
16 communities are needed. The current literature seems to support clinical mentoring, but more  
17 research on implementation interventions is needed, as this requires considerable time and  
18 effort. Whether this investment is cost-effective remains to be seen. Future studies should  
19 compare training interventions with and without clinical supervision and mentoring to see  
20 whether this is important for changes in practice and improved patient outcomes.

## 21 22 STRENGTHS AND LIMITATIONS

23 The information power of this study is sufficient (Malterud, Siersma, and Guassora, 2015). The  
24 first author, who conducted the interviews, had training and experience in qualitative research

1 and interviewing, and the quality of the dialogue between the interviewees and interviewer was  
2  
3 1 good. She is a physiotherapist and has good knowledge of the CFT approach. The aim of the  
4  
5 2 study was fairly specific and involved a specific group of informants – the physiotherapists who  
6  
7 3 participated in the CFT training intervention. The fact that the whole group of physiotherapists  
8  
9 4 who completed the training was included is a strength of this study. The themes raised by the  
10  
11 5 interviewees were rather broad, which is explained by the large number of participants, as well  
12  
13 6 as the analysis method, which explored the variation of understanding the phenomenon in  
14  
15 7 question. The study was theoretically well informed, although the feasibility of the CFT  
16  
17 8 approach in the context of the Finnish health care system has not previously been explored.  
18  
19 9 Health care systems and the basic training of physiotherapists vary in different countries and  
20  
21 10 this affects the organizational factors that can be perceived as barriers to or enablers of adopting  
22  
23 11 a BPS approach. The results cannot be directly transferred to other cultures, although many  
24  
25 12 findings are consistent with previous research.  
26  
27 13

28  
29 14 The illustration of the results using authentic quotations increases the validity of the study. The  
30  
31 15 authors are clinical and research physiotherapists, a professor of clinical psychology and a  
32  
33 16 professor of Physical and Rehabilitation Medicine with an interest in an individual BPS-  
34  
35 17 oriented approach to managing LBP. POS and SL were the trainers in this intervention and RH  
36  
37 18 and JK were present during the workshops. The diverse backgrounds of the research group  
38  
39 19 improved quality and rigor and subjected the analytical process to group reflexivity. The  
40  
41 20 credibility of the study was also strengthened by the first author writing preconceptions before  
42  
43 21 starting the study, as well as by discussion in the group on how professional backgrounds,  
44  
45 22 beliefs and attitudes towards the topic may have influenced the analysis process, and regular  
46  
47 23 discussions on the analysis process. The reliability of the research was also supported by one  
48  
49 24 author (AP) not being familiar with the CFT approach and not being included in the training  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1 intervention, and by the results being discussed in the group of researchers familiar with the  
2 phenomenographic research method but having no previous knowledge of the CFT approach.

3 One limitation of this study was that we only arranged workshops for the participants and there  
4 was no opportunity for clinical supervision and mentoring. It is also unclear whether these  
5 physiotherapists actually changed their practices or whether the intervention had a positive  
6 effect on patient outcomes. A strength of our study was that our training intervention was closer  
7 to a normal professional development workshop setting than previous training for  
8 physiotherapists that have delivered CFT interventions in randomized controlled studies (Vibe  
9 Fersum et al., 2013), and that we interviewed all the participating physiotherapists, who  
10 reported different kinds of responses to training. This also further enhanced the transferability  
11 of the results.

12 There was a gender bias towards women in this study; however, this is reflective of the  
13 workforce in Finland: in 2017 women comprised 77% of new physiotherapy students in 2007  
14 (Kuusi, Jakku-Sihvonen, and Koramo, 2009) and 82% of graduate physiotherapists in Finland  
15 (Valvira, 2017).

## 16 CONCLUSIONS

17 The participating physiotherapists' conceptions of learning and integrating CFT into clinical  
18 practice varied greatly. They reported that the CFT training intervention led them towards a  
19 more biopsychosocial, multidimensional understanding and care of patients with persistent  
20 LBP. The participants reported a range of responses to the training, suggesting that for some,  
21 the training was insufficient to support adequate changes in their practice behavior and that for  
22 others it was a lifechanging experience. The journey was not without challenges, but where  
23 they were overcome, a new way of working was possible, and physiotherapists reported

1 increased work motivation. However, it is not yet known whether the changes the  
2 physiotherapists reported influenced their clinical practices and patient outcomes.

### 3 ACKNOWLEDGEMENTS

4  
5 The researchers wish to thank all the physiotherapists who participated in this study, as well  
6 (BLINDED), who planned and co-instructed the workshops with (BLINDED), who worked  
7 hard to organize the workshops and took part in planning the whole research project.

### 8 9 REFERENCES

- 10  
11 Beissner K, Henderson C, Papaleontiou M, Olkhovskaya Y, Wigglesworth J, Reid M 2009  
12 Physical Therapists' Use of Cognitive-Behavioral Therapy for Older Adults with Chronic Pain:  
13 A Nationwide Survey. *Physical Therapy* 89:456-469.
- 14 Brinkmann, S 2013 *Qualitative interviewing*. Oxford university press.
- 15 Buchbinder R, van Tulder M, Öberg B, Menezes Costa L, Woolf A, Schoene M, Croft P 2018  
16 Low back pain: a call for action. *The Lancet* 391:2384–2388.
- 17 Cowell I, O'Sullivan P, O'Sullivan K, Poyton R, McGregor A, Murtagh, G 2018 The  
18 perspectives of physiotherapists on managing nonspecific low back pain following a training  
19 programme in cognitive functional therapy: A qualitative study. *Musculoskeletal Care* 17: 79–  
20 90.

- 1  
2  
3 1 Domenech J, Sanchez-Zuriaga D, Segura-Orti E, Espejo-Tort B, Lisón J 2011 Impact of  
4  
5 2 biomedical and biopsychosocial training sessions on the attitudes, beliefs and recommendations  
6  
7 3 of health care providers about low back pain: A randomised clinical trial. *Pain* 152: 2557-2563.  
8  
9  
10  
11 4 Ehrström J, Kettunen J, Salo P 2018 Physiotherapy pain curricula in Finland: a faculty survey.  
12  
13 5 *Scandinavian Journal of Pain*, 18:593-601.  
14  
15  
16  
17 6 Foster N, Delitto A 2011 Embedding psychosocial perspectives within clinical management of  
18  
19 7 low back pain: integration of psychosocially informed management principles into physical  
20  
21 8 therapist practice - challenges and opportunities. *Physical Therapy* 91:790–803.  
22  
23  
24  
25 9 Fritz J, Söderbäck M, Söderlund A, Sandborgh M 2018 The complexity of integrating a  
26  
27 10 behavioral medicine approach into physiotherapy clinical practice. *Physiotherapy Theory and*  
28  
29 11 *Practice*. [in press]  
30  
31  
32  
33 12 Gilbert D 1991 How mental systems believe. *American Psychologist* 46:107–119.  
34  
35  
36  
37 13 Guerrero A, Maujean A, Campbell L, Sterling M 2018 A Systematic Review and Meta-Analysis  
38  
39 14 of the Effectiveness of Psychological Interventions Delivered by Physiotherapists on Pain,  
40  
41 15 Disability and Psychological Outcomes in Musculoskeletal Pain Conditions. *Clinical Journal*  
42  
43 16 *of Pain* 34: 838-857.  
44  
45  
46  
47 17 Hartvigsen J, Hancock M, Kongsted A, Louw Q, Ferreira M, Genevay S, Hoy D, Karppinen J,  
48  
49 18 Pransky G, Sieper J, et al. for the Lancet Low Back Pain Series Working Group 2018 What is  
50  
51 19 low back pain and why we need to pay attention. *The Lancet* 391: 2356–2367.  
52  
53  
54  
55  
56  
57  
58  
59  
60

- 1  
2  
3 1 Holopainen R, Piirainen A, Heinonen A, Karppinen J, O'Sullivan, P 2018 From “Non-  
4  
5 2 encounters” to autonomic agency. Conceptions of patients with low back pain about their  
6  
7 3 encounters in the health care system. *Musculoskeletal Care* 16: 269-277.  
8  
9  
10  
11 4 Keefe, Main C, George S 2018 Advancing psychologically informed practice for patients with  
12  
13 5 persistent musculoskeletal pain: promise, pitfalls, and solutions. *Physical Therapy* 98:398–407.  
14  
15  
16  
17 6 Karstens S, Kuithan P, Joos S, Hill J, Wensing M, SteinHäuser J, Krug K, Szecsenyi J 2018  
18  
19 7 Physiotherapists’ views of implementing a stratified treatment approach for patients with low  
20  
21 8 back pain in Germany: a qualitative study. *BMC Health Services Research* 18:214.  
22  
23  
24  
25 9 Koes B, Lin C, Macedo L, McAuley J, Maher C 2010 An updated overview of clinical  
26  
27 10 guidelines for the management of nonspecific low back pain in primary care. *European Spine*  
28  
29 11 *Journal* 19:2075–2094.  
30  
31  
32  
33 12 Kuusi H, Jakku-Sihvonen R, Koramo M 2009 Koulutus ja sukupuolten tasa-arvo. *Sosiaali- ja*  
34  
35 13 *terveysministeriön selvityksiä* 2009:57.  
36  
37  
38  
39 14 Lin I, Wiles L, Waller R, Goucke R, Nagree Y, Gibberd M, Straker L, Maher C, O’Sullivan P  
40  
41 15 2019 What does best practice care for musculoskeletal pain look like? Eleven consistent  
42  
43 16 recommendations from high-quality clinical practice guidelines: systematic review. *British*  
44  
45 17 *Journal of Sports Medicine*. Published Online First: 02 March 2019. doi: 10.1136/bjsports-  
46  
47 18 2018-099878  
48  
49  
50  
51 19 Main C, George S 2011 Psychologically Informed Practice for Management of Low Back Pain:  
52  
53 20 Future Directions in Practice and Research. *Physical therapy* 91:1-5.  
54  
55  
56  
57  
58  
59  
60

- 1  
2  
3 1 Main C, Sowden G, Hill J, Watson P, Hay E 2012 Integrating physical and psychological  
4  
5 2 approaches to treatment in low back pain: The development and content of the STarT Back  
6  
7 3 trial's 'high-risk' intervention (StarT Back; ISRCTN 37113406). *Physiotherapy* 98:110–116.  
8  
9  
10  
11 4 Malterud K, Siersma V, Guassora A 2016 Sample size in qualitative interview studies: guided  
12  
13 5 by information power. *Qualitative Health Research* 26: 1753–1760.  
14  
15  
16  
17 6 Marton F, Booth S 2009 *Learning and Awareness*. New York: Routledge. Taylor & Francis  
18  
19 7 Group.  
20  
21 8 Marton F, Pong W 2005 On the unit of description in phenomenography. *Higher Education*  
22  
23 9 Research and Development 24:335-348.  
24  
25  
26 10 Matthias M, Parpart A, Nyland K, Huffman M, Stubbs D, Sargent C, Bair M 2010 The patient-  
27  
28 11 provider relationship in chronic pain care: Providers' perspectives. *Pain Medicine*  
29  
30 12 11:1688-1697.'
- 31  
32  
33 13 May C, Finch T 2009 Implementing, Embedding, and Integrating Practices: An Outline of  
34  
35 14 Normalization Process Theory. *Sociology* 43:535-554.  
36  
37  
38 15 Mesner S, Foster N, French S 2016 Implementation interventions to improve the management  
39  
40 16 of non-specific low back pain: a systematic review. *BMC Musculoskeletal Disorders*  
41  
42 17 17:258.  
43  
44  
45  
46 18 NICE National Institute for Health and Care Excellence 2016 *Low back pain and sciatica in*  
47  
48 19 *over 16s: Assessment and Management*. National Institute for Health and Care Excellence:  
49  
50 20 *Clinical Guidelines*. London: National Institute for Health and Care Excellence (UK).  
51  
52  
53  
54 21 Nielsen M, Keefe F, Bennell K, Jull G 2014 Physical therapist – delivered cognitive -behavioral  
55  
56 22 therapy: a qualitative study of physical therapists' perceptions and experiences. *Physical*  
57  
58 23 *therapy* 94:197-207.  
59  
60



- 1  
2  
3 1 Nijs J, Roussel N, Paul van Wilgen C, Koke A, Smeets R 2013 Thinking beyond muscles and  
4  
5 2 joints: Therapists' and patients' attitudes and beliefs regarding chronic musculoskeletal pain  
6  
7 3 are key to applying effective treatment. *Manual Therapy* 18: 96–102.  
8  
9  
10  
11 4 O'Sullivan K, O'Sullivan P, O'Sullivan L, Dankaerts W 2013 Back pain beliefs among  
12  
13 5 physiotherapists are more positive after biopsychosocially orientated workshops.  
14  
15 6 *Physiotherapy Practice and Research* 34:37–45.  
16  
17  
18  
19 7 O'Sullivan K, Dankaerts W, O'Sullivan L, O'Sullivan P 2015 Cognitive Functional Therapy  
20  
21 8 for disabling, nonspecific chronic low back pain: multiple case-cohort study. *Physical Therapy*  
22  
23 9 95:1478-1488.  
24  
25  
26  
27 10 O'Sullivan K, O'Keefe M, O'Sullivan P 2017 NICE low back pain guidelines: Opportunities  
28  
29 11 and obstacles to change practice. *British Journal of Sports Medicine*, 51:1632–1633.  
30  
31  
32  
33 12 O'Sullivan P, Caneiro JP, O'Keefe M, Smith A, Dankaerts W, Fersum K, O'Sullivan K 2018  
34  
35 13 Cognitive Functional Therapy: An Integrated Behavioral Approach for the Targeted  
36  
37 14 Management of Disabling Low Back Pain. *Physical therapy* 98:408-423.  
38  
39  
40  
41 15 Overmeer T, Boersma K, Denison E, Linton S 2011 Does teaching physical therapists to deliver  
42  
43 16 a biopsychosocial treatment program result in better patient outcomes? A randomized  
44  
45 17 controlled trial. *Physical Therapy* 91:804–819.  
46  
47  
48  
49 18 Piirainen A, Viitanen E 2010 Transforming expertise from individual to regional community  
50  
51 19 expertise: a four-year study of an education intervention. *International Journal of Lifelong*  
52  
53 20 *Education* 29:581-506.  
54  
55  
56  
57  
58  
59  
60

- 1  
2  
3 1 Sandborgh M, Åsenlöf P, Lindberg P, Denison E 2010 Implementing behavioural medicine in  
4  
5 2 physiotherapy treatment. Part II: adherence to treatment protocol. *Advances in Physiotherapy*  
6  
7 12: 13–23.  
8  
9  
10  
11 4 Sanders T, Ong B, Sowden G, Foster N 2014 Implementing change in physiotherapy:  
12  
13 5 professions, contexts and interventions. *Journal of Health Organization and Management.*  
14  
15 6 28:96-114.  
16  
17  
18  
19 7 Singla M, Jones M, Edwards I, Kumar S 2015 Physiotherapists' assessment of patients'  
20  
21 8 psychosocial status: Are we standing on thin ice? A qualitative descriptive study. *Manual*  
22  
23 9 *Therapy* 20:328-334.  
24  
25  
26  
27 10 Synnott A, O'Keeffe M, Bunzli S, Dankaerts W, O'Sullivan P, Robinson K, O'Sullivan K 2016  
28  
29 11 Physiotherapists report improved understanding of and attitude toward the cognitive,  
30  
31 12 psychological and social dimensions of chronic low back pain after Cognitive Functional  
32  
33 13 Therapy training: a qualitative study. *Journal of Physiotherapy* 62:215-221.  
34  
35  
36  
37 14  
38  
39 15 Tong A, Sainsbury P, Craig J 2007 Consolidated criteria for reporting qualitative research.  
40  
41 16 (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for*  
42  
43 17 *Quality in Health Care* 19:249-253.  
44  
45  
46 18 Toye F, Seers K, Barker KL 2017 Meta-ethnography to understand healthcare professionals'  
47  
48 19 experience of treating adults with chronic non-malignant pain *BMJ Open* 7:e018411.  
49  
50 20 Waller G 2009 Evidence-based treatment and therapist drift. *Behaviour Research and Therapy*  
51  
52 21 47:119-127.  
53  
54  
55 22 Valvira 2017 Registers of social welfare and healthcare professionals (Terhikki)  
56  
57  
58  
59  
60

- 1  
2  
3 1 Vibe Fersum K, O'Sullivan P, Skouen J, Smith A, Kvåle A 2013 Efficacy of classification-  
4  
5 2 based cognitive functional therapy in patients with non-specific chronic low back pain: a  
6  
7 3 randomized controlled trial. *European Journal of Pain* 17:916–928.  
8  
9  
10  
11 4 Zangoni G, Thomson O 2017 'I need to do another course' - Italian physiotherapists' knowledge  
12  
13 5 and beliefs when assessing psychosocial factors in patients presenting with chronic low back  
14  
15 6 pain. *Musculoskeletal Science and Practice* 27):71-77.  
16  
17  
18  
19 7 Zidarov D, Thomas A, Poissant L 2013 Knowledge translation in physical therapy: from theory  
20  
21 8 to practice. *Disability and Rehabilitation* 35:1571-1577.  
22  
23  
24  
25 9 Åkerlind G 2005 Variation and commonality in phenomenographic research methods. *Higher*  
26  
27 10 *Education Research & Development* 24:321-334.  
28  
29  
30 11  
31  
32 12 Åkerlind G 2008 An academic perspective on research and being a researcher: an integration  
33  
34 13 of the literature. *Studies in Higher Education* 33:17-31.  
35  
36  
37 14  
38  
39 15 Åkerlind G 2017 What future for phenomenographic research? On continuity and development  
40  
41 16 in the phenomenography and variation theory research tradition. *Scandinavian Journal of*  
42  
43 17 *Educational Research* 62:949-958.  
44  
45  
46 18  
47  
48  
49 19  
50  
51  
52 20  
53  
54  
55 21  
56  
57  
58 22  
59  
60

1h 45min	Overview of evidence of management of low back pain (LBP), multidimensional framework for understanding and exploring the biopsychosocial nature of LBP, beliefs and attitudes. (Lecture)
2h 45min	Physical, psychosocial and lifestyle risk factors (Lecture), Utilization of screening tools to identify psychosocial risk factors
1h 30min	Interview and examination
1h 30 min	Communication training
7h	Management planning, interventions (including management of fear avoidance behaviour, mal-adaptive movement patterns, pain behaviours, graded activity, graded exposure), problem solving, complex cases. (Lecture + group discussions, practicing the use of clinical reasoning form)
1h 30 min	Case studies
7h	Patient demonstrations (4 patients with 2 follow-up visits)

Table 1. Content of the initial four-day workshop

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Table 2. Content of the two-day booster session

1h 30min	Questions and answers session, discussion on participants' difficulties / obstacles and successes in integrating cognitive functional therapy into clinical practice
2h	Management of low risk patients, movement patterns, challenging beliefs (lecture, group discussion)
7h 30min	Patient demonstrations (4 patients) with discussion and practice of the use of the clinical reasoning form

Table 3. Themes of variation and categories of description of phenomenon of learning and integrating Cognitive Functional therapy into clinical practice

	Categories				
Themes of variation	<b>I Recognizing difference of new approach</b>	<b>II Towards integrating the new approach</b>	<b>III Waking up to explore</b>	<b>IV Commitment to new approach</b>	<b>V Expanding application of new approach</b>
<b>Membership of work community</b>	Loneliness in work community	Organizational traditions as barriers	Desire for common language	Supportive work community	Importance of multidisciplinari ty
<b>Learning journey</b>	Resistance	Personal challenges during journey	Being shaken	Becoming convinced	Continuous adventurous journey
<b>Transition to new working methods</b>	Insecurity	Combining old and new approach	Critical reflection on one's own work	Better equipped to help	Permission for creativity
<b>Professional role as a physiotherapist</b>	Looking at patients in different way	Changing attitudes and language	Stepping outside one's comfort zone	Closer to patient	Renewed professional identity

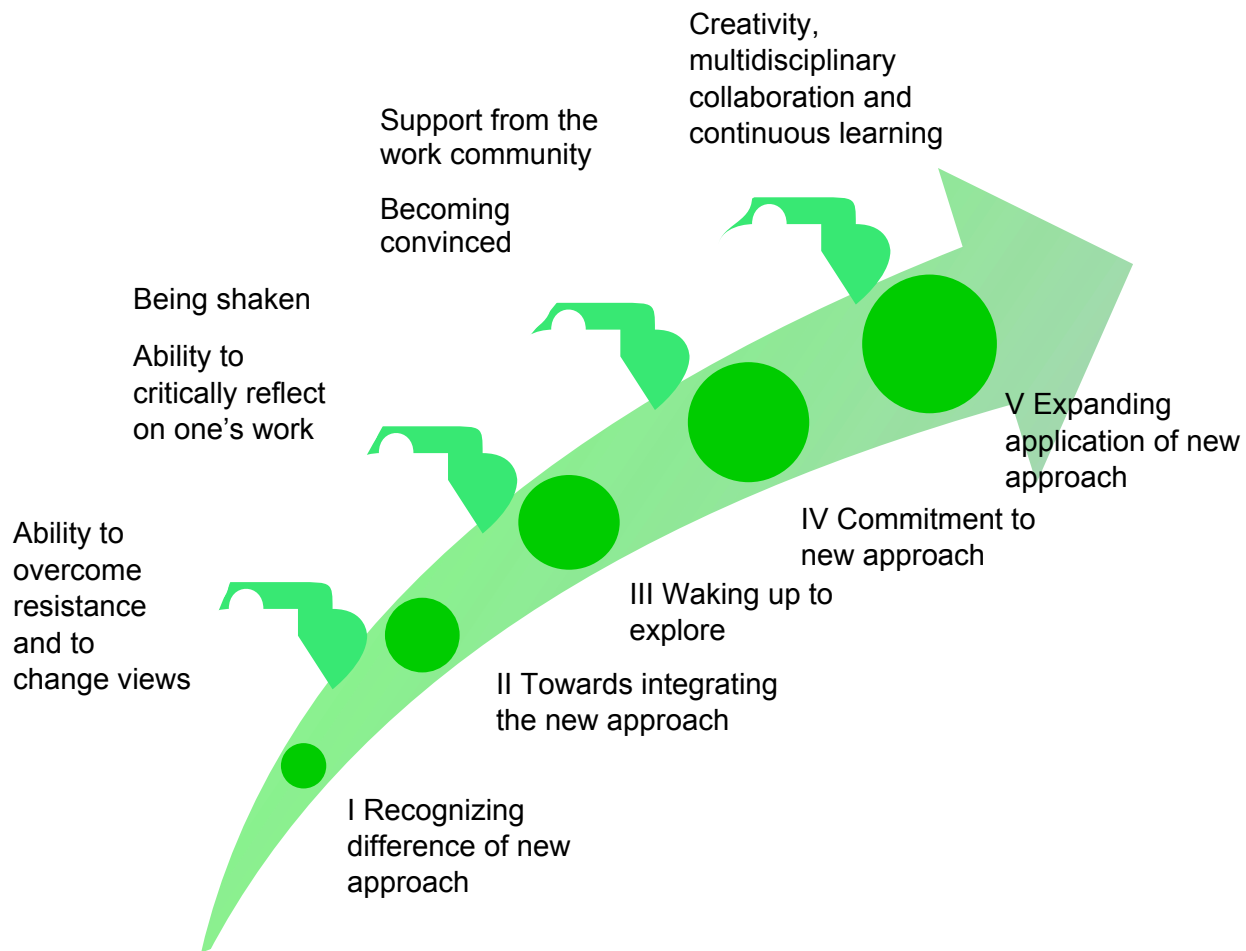


Figure 1: The critical aspects between the categories of description of the phenomenon of learning and integrating CFT into clinical practice.

## Appendix 1. Participants' characteristics

\*OHC=occupational health care, PHC=primary health care, outpatient clinic

Physiotherapist	Female /Male	Age	Years of practice	Type of health care unit	Days of Cognitive Functional Therapy training by the time of interview
A	F	37	15	OHC	6
B	M	34	9	OHC	4
C	F	35	10	OHC	6
D	F	52	25	OHC	6
E	F	52	27	PHC	4
F	M	55	31	PHC	6
G	F	55	30	PHC	4
H	F	47	28	PHC	4
I	F	43	19	PHC	4
J	F	34	10	PHC	4
K	F	55	30	PHC	4
L	M	40	15	PHC	4
M	F	39	16	OHC	6
N	F	38	12	OHC	6
O	F	52	29	PHC	6
P	F	50	24	PHC	4
Q	F	33	11	PHC	6
R	F	40	16	PHC	6
S	F	61	30	OHC	6
T	F	52	15	OHC	6
U	F	45	15	PHC	4
V	F	53	27	PHC	6



## Appendix 2

### Interview guide

#### Key questions:

How do you see CFT now – what does it mean to you?

Tell me about your process of learning CFT and implementing it in practice.

#### Following themes were flexibly addressed if not otherwise brought up by the interviewee

Expectations of training – were they realized? How?

Did the training change beliefs and attitudes, understanding of low back pain? Were your beliefs challenged? How?

Did the training influence your working methods? Communication, interview, assessment, treatment? Did it affect the skills for building a therapeutic alliance? How?

Did your patients notice a change? Did this training affect your patients? How?

What promoted the learning/implementation of the CFT approach?

What hindered the learning/implementation of the CFT approach?

Did it affect your personal well-being / professional identity? How?

Did it increase your confidence in assessing psychosocial factors with your patients? And treating according to the assessment?

Did it affect your confidence in your skills for treating patients with persistent pain (low back pain)?

What was easy/helpful?

What was difficult/unhelpful?

What promoted learning?

Was the amount of training sufficient? What was the impact of the booster session/ web-based tasks?

Are you willing to develop further? What is needed to develop further?